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ABSTRACT

A method for solving problems that arise in such areas as teacher/teacher and teacher/student interactions is presented in this document. The first section shows how to write a problem statement that answers the following questions: Who is affected? Who is causing the problem? What kind of a problem is it? What is the goal for improvement? Considerations are listed that can help educators respond to each of the four questions while writing the problem statement. The second section shows how to complete a force field anlaysis on the most pressing need uncovered through a needs assessment; the analysis involves rank ordering forces involved in a problem situation in order of importance, rating them in terms of clarity, and noting which ones need further examination. The document then describes a sample problem and shows in narrative and tabular form how the forces involved might be rated for importance and clarity and how a force field analysis might be applied in finding a solution to the problem. A second problem exercise is briefly presented. (GW)

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FORCE FIELD ANALYSIS

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August, 1976

CS 004 032

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OVERVIEW

You have now moved from a consideration of the criteria of excellence as it appears in the publication Focus on Excellence, a booklet developed by the former New England Consortium for the Right to Read Effort. This publication contains 26 statements of conditions listed under five general goals. These conditions and goals are considered hallmarks of an exemplary reading program at the local level.

You have also seen that the Model Needs Assessment Instrument has been keyed to the Focus on Excellence. At this point your local In-House Task Force has written discriminating items under the 47 segmented conditions. A local instrument has been developed and administered to the staff in your school system.

What is your next step? The present booklet shows you how to list your needs in a hierarchy from the most pressing need to the least pressing one. At the risk of coining more jargon, we term this process of ordering needs "prioritizing."

Having done that your task force must do a force field analysis on the very first need that appears in your hierarchy of needs. You must take this first need and write a problem statement. What appears below is a series of steps to guide you in writing such a problem statement.

FOUR GUIDELINES FOR WRITING A PROBLEM STATEMENT

Suppose that I said to you, "We have a communication problem among our faculty. What would you suggest we do about it?" You would undoubtedly want to ask many questions before hazarding an actual suggestion. What is it that is not being communicated? Who feels the need for such communication? Why isn't this communication taking place? Specifically, who would need to be communicating what to whom to improve the problem situation?

A good problem statement includes answers to such questions. It is a brief, specific statement about a problem situation. A problem situation exists when there is a difference between the way things are and the way someone would like them to be. The word, problem, tends to suggest a negative meaning to most of us. The definition used here can be applied to situations which we feel negative about. It also applies to situations that are not thought of as negative ones. The situation might be generally good now and an accomplishment of a new objective could make it even better. You might have a station wagon that satisfies your family's basic needs and feel that having a sports car too would make things even better.

Using the definition of a problem situation as one where there is discrepancy between the way things are now and the way someone would like them to be implies that there are almost always

"problems" that could be worked on. There are almost always improvement goals in education that we would like to be working toward.

One of the greatest barriers to working constructively toward achieving improvement goals is lack of specificity in stating the problem. Compare the two following efforts to state a problem.

> "We have a communication problem among our faculty. We use team teaching in our building. Virtually all of us involved in teams are concerned that we haven't given adequate attention to creating ways to share innovative ideas across teams. We need ways of sharing that don't take up the time of those to whom a particular idea is not relevant, but which share enough detail so that those who are interested will know how to try it out in their own setting."

The latter statement covers four points that are suggested as guidelines for writing a good problem statement. It answers each of these guideline questions:

1. Who is affected? Members of the teaching teams are affected. "Virtually all of us involved in teams are concerned..."
2. Who is causing it? The members of the teaching teams seem to see themselves as mainly responsible. "...we haven't given adequate attention..."
3. What kind of a problem is it? Note that the reason for the problem is a lack of adequate means for doing

something. "We need ways of sharing..."

4. What is the goal for improvement? Specifically, how will things look when the goal has been achieved? In this case, it has been made clear that the goal is not simply increased communications. The goal is creation of "...ways of sharing that don't take up time of those to whom a particular idea is not relevant, but which share enough detail so that those who are interested will know how to try it out in their own setting."

The most important guideline for writing a good problem statement is inclusion of a specific goal for improvement. Two kinds of confusion can arise when you are attempting to describe the goal for improvement in your statement. One relates to the fact that there may be many possible major and minor goals in the problem situation. It might require many, many pages of writing to describe the entire problem situation. Describing the problem situation is not the same as writing a problem statement. A problem statement answers the four guideline questions in focusing on one, specific improvement goal with the problem situation.

The second kind of confusion arises from needing to be specific in writing the problem statement, while at the same time being ready to change the statement any time new understandings of the problem situation indicate that you should do so. In the early stages of working on a problem, I may have quite erroneous

ideas about what kind of problem it is or what the improvement goal should be. By stating specifically what I think is the case, I'll know what to explore. I will be clear about what to change in the statement any time new information shows my initial ideas were wrong. The problem statement should be as specific as possible, but always open to change in the light of new understanding.

Following are some considerations that can help you to be specific as you respond to the four guideline questions while writing a problem statement:

1. Who is affected? Consider these possibilities before deciding what you want to say about this. Is it you? Is it one other person? Is it a small group of people? Is it an entire organization? Is it the community or society at large?
2. Who is causing it? We frequently speak of problems as though they were caused by circumstances that didn't relate directly to people. This is almost never the case. There is almost always some person or persons who could influence things being different. Consider the same possibilities as above. Is it you? Is it one other person? Is it a small group of people? Is it an entire organization? Is it the community or society at large?
3. What kind of a problem is it? There are many ways to classify kinds of problems. The following considerations may prove helpful:

-- There is a lack of clarity or disagreement about goals.

-- There is lack of clarity or disagreement about the means of achieving goals.

-- There is a lack of skills needed to carry out a particular goal

-- There is lack of material resources.

-- There is inaccurate communication.

-- There is too little or too much communication.

-- People have a different understanding of the same thing.

-- There is insufficient time or schedules don't coincide.

-- Roles are lacking or inappropriate.

-- Norms are restrictive, unclear, or misinterpreted.

-- There are conflicts of ideology.

-- There is a lack of clarity or a conflict about decision making, e.g., power struggles.

-- Expression of feelings is inappropriate or inadequate.

-- There is conflict related to individual differences.

4. What is the goal for improvement? Ideally, this should be stated so clearly that anyone reading your statement would know how to determine when the goal had been reached. It would tell exactly who would be doing

what, where, how and to what extent. Until you know where you are going, it's very difficult to make and carry out plans to get there. The more clear you are about your intended target at any given time, the more likely you will be to recognize that it is an incorrect target should this prove to be the case.

Now that you have had some practice in writing a problem statement, you are ready to do a force field analysis of the very first and most pressing need uncovered by the administration of your local needs assessment instrument.

THE FORCE FIELD ANALYSIS

In the early stages of problem solving, primary concern should be for gaining a clear diagnostic understanding of the situation which exists "now." The force field technique provides a diagrammatic picture of the forces that are maintaining a situation at a given moment. When you write a force field on a piece of paper, it probably indicates only a few of the actual complex sets of forces operating in the situation you are concerned with. You might <u>feel</u> very sure that the forces you have listed are important ones, but have little data to support your belief or give you a usable understanding of just how these forces are operating. Your force field can be analyzed to consider which forces might profitably be investigated in more objective detail. This diagnostic analysis involves three steps.

First, rank order all of the forces "for" and "against" in order of their importance. Importance is defined in terms of the degree to which change of a particular force would cause the situation to move most toward the goal. You would rank as number one that force which you believe, if changed, would result in most movement toward the desired goal. Force number two would be that force which you believe, if changed, would yield the second most movement toward the goal. Continue in this manner until you have rank ordered all of the forces for and against movement toward the goal.

Second, rate each force in terms of clarity. Look at your statement of a force. How clear are you that it really is a force in terms of being able to show objective data about its importance, who is involved in it and exactly how and why it is operating? Clarity is not a matter of being positive in your own belief. Sometimes, being "positive" is being wrong in a loud voice. Clarity is defined here as having objective data with which you could stand up in court and prove your case beyond a shadow of a doubt. Rate each force as to whether you are clear, partly clear or unclear about it in these terms.

Third, look at the combination of ranking and rating which you have done. Forces which you have given a high ranking of importance, but are unclear about, are obvious candidates for further exploration. Your ranking and rating analysis tells you where more data is needed for diagnosing the problem situation.

SAMPLE PROBLEM EXERCISE

You are in a school which has an A through F grading system. A senior girl from a low income family comes to you, her chemistry teacher, and explains that a specific college has offered her financial aid if she receives at least a C in Chemistry. The college officials indicate that since she plans a career in medical technology, her chemistry grade would be an indication of success in college.

You have already decided that her grade for the semester should be a D. You not only considered scores on objective tests, but also class discussion, participation, involvement, and your own subjective judgment in arriving at a grade. Now you have learned that unless her grade is a C, she will not receive financial aid and obviously without such aid she will not be able to go on to college. This is the only offer of financial aid that she has received.

Do you, as the teacher, change the grade from a D to a C and provide the student with an opportunity to continue her education, or do you stick to your decision to award a D and cut off financial aid that the student would receive, and thus her college chances?

SUMMARY FOR CRITERIA OF RANKING AND RATING

Ranking

A. Importance is defined as significance. How important or significant is a force in yielding the most important movement toward the goals?

B. Rank weight refers to the inverted rank order. More explanation of this will be given later.

Rating

A. Strength refers to resistance to change. How easy or hard would it be to change the force? Is it hard, medium, or easy?

B. Clarity refers to evidence. What evidence is there that it is a force? How clear is it to me that it is a force?

Numerical Count

A. Numerical count refers to the number of statements written under a given goal, some of which will be forces towards and others forces against attaining that given goal.

B. See Table 2 for an example of numerical count.

TABLE 1

Rank Order	Rank Weight	Goal: To change the girl's grade to a C to provide her with an opportunity to continue her education.	Rate: Clarity Clear High	Partly Clear Average	Unclear Low
6	4	1. The girl should have the opportunity to continue her education.	3		
7	3	2. She would probably be unable to go to college without financial assistance.	3		
8	2	3. The A through F grading system is not an equitable measure of student performance.			1
9	1	4. Everyone should have the opportunity to go to college.		2	
2	8	5. The girl earned a D in Chemistry.	3		
1	9	6. Standards of performance should not exist if they are not adhered to.	3		
4	6	7. It would be unfair to the other students to change her grade.	3		
5	5	8. The girl might not be "college material."			1
3	7	9. It would violate the teacher's personal value system to change the grade.	3		

SUMMARY TABLE FOR FORCE FIELD ANALYSIS

TABLE 2

oal: To change the girl's grade to a C to provide her with an opportunity to continue her educat

ank rder	Rank Weight	Rate	FORCES FOR	FORCES AGAINST	Rank Order	Rank Weight	Ra
6	4	3	The girl should have the opportunity to continue her education.	The girl earned a D in Chemistry.	2	8	
7	3	3	She would probably be unable to go to college without financial assistance.	Standards of performance should not exist if they are not adhered to.	1	9	
8	2	1	The A through F grading system is not an equitable measure of student performance.	It would be unfair to the other students to change her grade.	4	6	
9	1	2	Everyone should have the opportunity to go to college (open admissions).	The girl might not be "college material."	5	5	
				It would violate the teacher's personal value system to change the grade.	3	7	
Total: 30	10	9		Total:	15	35	

Numerical count Forces For: 4
Numerical count Forces Against: 5

In this particular example, the "forces for" and "forces against" are almost equally balanced. Now your task force must decide if the "forces for" are greater than the "forces against" changing the girl's grade. A simple numerical count would seem to suggest that the "forces against" would militate against changing the girl's grade. (Five "forces against" versus four "forces for".) However, there might be some wisdom in using more than a simple numerical count in order to be more statistically precise. In fact, a numerical count could not take into account the fact that some forces or reasons for making a decision one way or the other are simply more important than others.

You have already learned how to rank order and rate each item, now you must determine the rank weight of each item. The rank weight is merely the rank order inverted. Therefore, if there are 10 items ranked 1 - 10 (most important to the least) with one item being ranked as the most important, assign that item a rank weight of 10. The item rank ordered as second important, or #2, should be given a rank weight of 9. The item rank ordered #8 now would become rank weighted 3, and so on.

Using the newly calculated rank weights and the rates you can now finish the equation to determine which are stronger, forces for, or forces against. Let's do the "forces for" first. For each item, multiply the rank weight x the rate. The first "force for" item would be 4 x 3 =12, the second would be 3 x 3 = 9, the third: 2 x 1 = 2, and the fourth: 1 x 2 = 2. Next, take the pro-

ducts of each, i.e. the product of each rank weight x rate, and add them all together. You will get 24 (12 + 9 + 1 + 2 = 24).

Use the same procedure for items in "forces against".

Rank weight x rate = _____. Item #1: 8 x 2 = 16

Item #2: 9 x 1 = 9

Item #3: 6 x 4 = 24

Item #4: 5 x 5 = 25

Item #5: 7 x 3 = 21

Add all the products: 16 + 9 + 24 + 25 + 21 = 95. So, the total score for "forces for" in this case is 24 while the score for "forces against" is 95. Obviously, the "forces against" are far more powerful, so the girl's grade should not be changed to a C.

Let us try another example which has been provided for you. The first step is to write the goal in very precise terms. Second, you are to write statements under that goal. Third, rank order the statements from 1 to n. Fourth, rate the statements in terms of clarity: 3 for clear, 2 for partly clear, and 1 for unclear. Next, remember to calculate the rank weight be reversing the rank scores from n to 1. With these two scores it is possible to derive a total numerical score that will help you decide whether the goal can be met, or whether it should be bypassed in order to deal with another need that has been uncovered through your needs assessment.

A SECOND SAMPLE PROBLEM EXERCISE

There are twelve teachers in your Learning Community, and it is February. Three of the teachers recently have been sitting back while the other nine do most of the work involved in making the LC function smoothly. You know that this is that "blah" time of year, but it still doesn't seem fair for some teachers to get away with doing less while others must carry the burden. Also, you sense that it could, if not

corrected somehow, develop into a chronic situation that would be unhealthy for the whole Learning Community. How do you handle this situation?

Having completed this second exercise, you and your local task force are now ready to deal with the first need to come out of your own local needs assessment. You will recall that in the Needs Assessment Instrument Handbook, Goal D was the area of greatest need in that hypothetical sample. Let us pretend that everyone who completed the assessment rated Criterion D, 1, a: "All materials of instruction are written at the instructional level of the students using them" a 1, (low). Let us pretend further that your task force has rewritten this criterion as a problem statement. It might appear as the following:

> "Science teachers at the high school level are using materials of instruction written two-to-three years above the reading level of the majority of their students."

Take that problem statement and rewrite it into a goal. For example, Goal: To get science teachers at the high school level to use materials of instruction that are written at the grade level of their students' reading ability. Now write as many statements under both "forces for" and "forces against" attaining the goal so that this problem can be solved.

Essentially, all of the above steps are easily followed in dealing with your first most pressing need to come out of your local needs assessment.